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91584R

Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

# Level 3 Mathematics and Statistics (Statistics) 2026

## 91584 Evaluate statistically based reports

Credits: Four

RESOURCE BOOKLET

Refer to this booklet to answer the questions for Mathematics and Statistics (Statistics) 91584.

Check that this booklet has pages 2–6 in the correct order and that none of these pages is blank.

**YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.**

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## RESOURCE ONE: NATIONAL TEDDY BEAR DAY SURVEY

**National Teddy Bear Day survey finds more than half of adult Americans still have their teddy bear from childhood**



In anticipation of National Teddy Bear Day on September 9, *Build-A-Bear Workshop* announced results from a survey that revealed more than half of American adults still have their favourite stuffed animal from childhood. The survey, completed by *Atomik Research* and commissioned by *Build-A-Bear Workshop*, uncovered a number of surprising furry-friend findings, including:

- **The majority hugs:** Across generations, more than half of all respondents surveyed mentioned they still own a stuffed animal. 40% of respondents sleep with their stuffed animal by their side.
- **Keepsake teddy:** 56% of respondents have owned (and held onto) their favourite stuffed animal for more than two decades. Additionally, 72% said they plan to keep their stuffed animal forever.
- **Big collections**: 35% of respondents kept only one favourite stuffed animal from their childhood while 38% of respondents kept two or more favourites. 4% of respondents have kept their entire childhood stuffed animal collection, sometimes more than a whopping 30 toys.
- **Memories of comfort:** 30% of respondents said a feeling of comfort was the first memory that came to mind when thinking about a childhood stuffed animal, followed by the memory of the person who gave it to them (22%), and the stuffed animal's appearance (19%).

*Build-A-Bear Workshop* is a retail chain where customers make their own stuffed toy, including teddy bears, plush animals and other characters. *Build-A-Bear Workshop* shared the survey results with clinical psychologist and New York Times bestselling author Dr. Shefali Tsabary to learn more about the bond many adults have with items like teddy bears.

"As children develop independence from their parents, they still yearn for a secure bond with something. In many cases, children turned to stuffed animals, including teddy bears, to help them through this transition," said Dr Shefali Tsabary. "As we enter adulthood and leave home for the first time, it's no surprise that the same object re-enters our life, providing comfort while also helping us work through feelings of uncertainty as we transition into a new life stage."

The *Build-A-Bear* survey was conducted by *Atomik Research* between 1 and 3 August 2017 on a sample of 2004 US adults in the United States who have / had a stuffed animal. *Atomik Research* is an independent market research agency that employs Market Research Association-certified researchers and follows the Market Research Association code of conduct.

Source: http://www.prnewswire.com/news-releases/national-teddy-bear-day-survey-finds-more-than-half-of-adult-americans-still-have-their-teddy-bear-from-childhood-300512770.html

## RESOURCE TWO: DO DOGS JUDGE YOU?

New research from Kyoto University suggests that female pet dogs are very good at judging human competence, and use this judgement to guide their own behaviour.

This study involved 60 pet dogs (37 females, 23 males). Two actors worked with the dogs while the owner remained in the room. The owner was instructed to keep their eyes closed throughout the trial.

Each trial had two phases: the demonstration phase and the test phase. The pair of actors in each trial were randomly allocated as "competent" or "incompetent".

**Figure 1: Diagram of experiment set-up**



In the demonstration phase, two actors each took a container containing a non-food item, shook it to get the dog's attention, and attempted to open the lid.

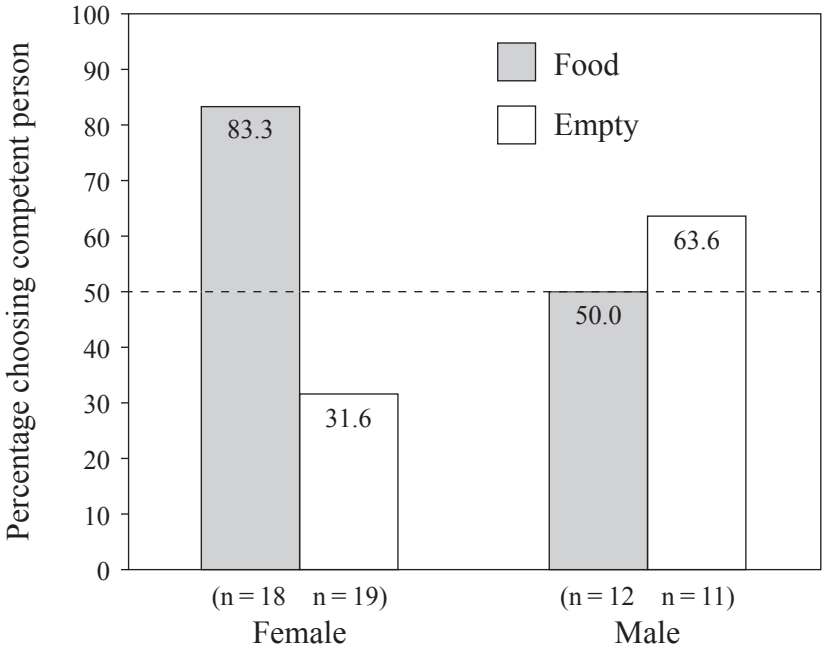
- If the actor was "competent", they opened the lid after about 2 seconds of trying, placed the container and lid on the floor separately, removed the object, showed it to the dog, and placed the object on the lid.
- If the actor was "incompetent", they attempted to open the lid for about 5 seconds, before putting the still-unopened container on the floor.

In the test phase, both actors simultaneously tried to open two new clear containers placed in front of them. For half of the dogs, these new containers held the dog's favourite food treat (the "food condition"), while for the other half, the containers were empty (the "empty condition"). The scientists recorded which person the dog looked at, and which one it chose to approach first.

The results were striking:

- In the "food condition", dogs spent significantly more time looking at the "competent person".
- Even more notably, female dogs in the "food condition" displayed a strong preference, being significantly more likely to approach the "competent person". A remarkable 15 out of 18 female dogs (83.3%) in this group chose to approach the competent actor.
- In stark contrast, dogs in the "empty condition" showed no clear preference for either actor, suggesting that the presence of a potential reward (food) motivated their choices based on observed competence.

**Figure 2: Percentage of dogs choosing the competent person**




These findings indicate that female dogs appear to accurately assess a human's ability to perform a task, such as opening a container, and use this information to predict who might give a reward. The study also highlighted potential sex differences in dogs' social evaluation abilities, with female dogs consistently showing a greater inclination to evaluate and act upon observed human competence than male dogs. This aligns with other research suggesting female dogs may possess superior social skills.

Source: https://pubmed.ncbi.nlm.nih.gov/36179930/

## RESOURCE THREE: SECOND-HAND FASHION

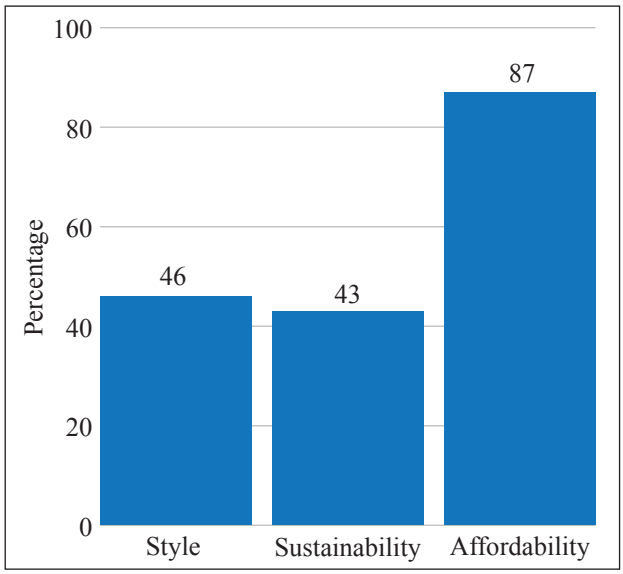
### 60% of New Zealand shoppers are purchasing second-hand clothing

A new survey has revealed that 60% of respondents purchase second-hand clothing. The survey was conducted by do-it-yourself market research provider *Pollfish* for *Designer Wardrobe*, New Zealand's largest pre-loved fashion marketplace.

The survey investigated the attitudes and behaviours of 500 respondents towards pre-loved fashion and showcased the growing popularity of second-hand shopping. The main reason for buying second-hand clothing was affordability, almost twice as likely to be selected as style.

"This survey shows that second-hand shopping is becoming more and more popular, with many of our members recognising the benefits of choosing pre-loved items," says the CEO and co-founder of *Designer Wardrobe*.

**Figure 3: Main reasons New Zealand shoppers buy second-hand clothing**




Since its founding in 2015, *Designer Wardrobe* has experienced unprecedented growth, becoming a major player in the pre-loved fashion industry. The company's purpose-built, New Zealand-made marketplace platform is the go-to for 280 000 users to shop for and sell pre-loved clothing, and now facilitates around $1.5 million in transactions every month.

### Half of US clothing budgets go to second-hand clothes

The 12th annual *ThredUp* study found that adult consumers in the United States of America (US consumers) spent, on average, nearly half of their annual clothing budget on pre-worn items. 60% of respondents said shopping for second-hand clothes gives them the most "bang for their buck", making savings the most popular reason to shop second-hand. Concerns about the environment ranked fourth in the study (45%), and buying clothes for others ranked eighth (12%).

**SECOND-HAND MAKES UP A SIGNIFICANT PORTION OF US CONSUMER SPEND & CLOSETS**



52% of US consumers shopped for second-hand clothes in 2023.



2 in 5 clothing items bought in the last 12 months were second-hand.

*ThredUp*'s annual *Resale Report* was conducted by *GlobalData*, a market research firm. *GlobalData* conducted a survey of 3654 US adults over 18 in December 2023, asking specific questions about their behaviours and preferences for buying second-hand clothes.

* *Designer Wardrobe* (New Zealand) and *ThredUp* (US) are platforms for buying and selling second-hand clothes. They charge a small price to sellers for the service.

Source: https://itbrief.co.nz/story/60-of-new-zealand-shoppers-purchasing-secondhand-clothing
https://www.thredup.com/resale/2023